



*Virginia Occupational Safety and Health*



**VOSH PROGRAM DIRECTIVE: 02-240**

**ISSUED: September 15, 2009**

*(Note different effective date)*

**SUBJECT:**     **Reverse Signal Operation Safety Requirements for Motor Vehicles, Machinery and Equipment in General Industry and the Construction Industry, 16VAC25-97, Inspection Procedures and Interpretations**

- A.     Purpose.** This directive transmits to field personnel inspection procedures and interpretation guidance for the above VOSH unique regulation and other amendments to related existing standards.

*This Program Directive is an internal guideline, not a statutory or regulatory rule, and is intended to provide instructions to VOSH personnel regarding internal operation of the Virginia Occupational Safety and Health Program and is solely for the benefit of the program. This document is not subject to the Virginia Register Act or the Administrative Process Act; it does not have general application and is not being enforced as having the force of law.*

- B.     Scope.**  
This directive applies to all VOSH personnel.

- C.     Reference.**  
VOSH Program Directive 12-240 (1 August 2009), Reverse Signal Operation Safety Requirements for Motor Vehicles, Machinery and Equipment in General Industry and the Construction Industry, 16 VAC 25-97.

Regulatory rulemaking documents for the final regulation can be found at:  
<http://www.townhall.state.va.us/L/viewstage.cfm?stageid=4381&display=documents>

- D.     Cancellation.**  
None.

- E.     Action.**  
Directors and Managers shall ensure that field personnel understand and comply with the standard included in this directive.

- F.     Effective Date.**  
**September 18, 2009**    *(See also Section L. for phase-in of full enforcement.)*

- G.     Expiration Date.**  
Not Applicable.

## H. Purpose of the Regulation

The purpose of the final regulation, 16 VAC 25-97, and the amendments to related existing standards is to provide comprehensive protection to employees in construction and general industry work areas exposed to vehicular, machinery and equipment traffic covered by the aforementioned standards and to provide the same degree of protection to employees in similar working conditions where vehicles, machinery and equipment with obstructed views to the rear were not otherwise covered by current regulations.

**The amended existing regulations and the new unique regulation will apply to all vehicles, machinery and equipment covered by the standards in both construction and general industry, whether during operations in off-road work zones or over the road transportation or hauling.**

## I. Background.

### Summary of Rulemaking Process

The Notice of Intended Regulatory Action (NOIRA) was adopted by Board on March 7, 2006. The NOIRA was published on September 4, 2006, with a 30-day comment period ending on October 4, 2006. No comments were received. The Board adopted proposed regulatory language on December 6, 2006. The proposed regulation was published on August 20, 2007, with a 60-day comment period ending on October 19, 2007. No comments were received. A public hearing was held by the Board on October 18, 2007. No comments were received.

After the close of the 60-day comment period, the Department received requests from five individuals for an additional opportunity to comment. At its meeting on February 28, 2008, the Board approved the publication of an additional 30-day comment period, which was published from April 14 to May 14, 2008. No comments were received through Virginia's Regulatory Town Hall. Comments were submitted directly to the VOSH Program, and are addressed below. The Department held a meeting on April 16, 2008, with interested parties representing employer and employee interests from the construction and general industries.

For list of participants and a summary of the meeting, see:

[http://www.townhall.state.va.us/L/GetFile.cfm?File=E:\townhall\docroot\92\2040\4381\AgencyStatement\\_DOLI\\_4381\\_v2.pdf](http://www.townhall.state.va.us/L/GetFile.cfm?File=E:\townhall\docroot\92\2040\4381\AgencyStatement_DOLI_4381_v2.pdf).

A revised proposed regulation was adopted by the Board on July 10, 2008. The revised proposed regulation was published for an additional 30 day comment period due to substantive changes to the original proposed regulation in accordance with Va. Code §2.2- 4007.03.B., which provides:

"If an agency wishes to change a proposed regulation before adopting it as a final regulation, it may choose to publish a revised proposed regulation, provided the latter is subject to a public comment period of at least 30 additional days and the agency complies in all other respects with this section."

On November 20, 2008, the Virginia Safety and Health Codes Board voted unanimously to adopt as a final regulation of the Board the Amendment to Reverse Signal Operation Safety Procedures Dealing with Vehicles, Material Handling Equipment and Motor Vehicle Equipment in existing standards:

16 VAC 25-90-1910.269 (p)(1)(ii), Vehicular Equipment for Electric Power Generation, Transmission and Distribution in General Industry;

16 VAC 25-175-1926.601(b)(4), Motor Vehicles in the Construction Industry;

16 VAC 25-175-1926.602(a)(9)(ii), Material Handling Equipment in the Construction Industry;

and 16 VAC 25-175-1926.952(a)(3), Mechanical Equipment, Power Transmission and Distribution in the Construction Industry; and 16 VAC 25-97,

The Board also adopted a final regulation to establish Reverse Signal Operation Safety Requirements for Vehicles, Machinery and Equipment for General Industry and the Construction Industry, 16 VAC 25-97.

### Issues and Basis

As discussed below, reverse signal alarm accidents have accounted for a combined total of 29 (20 in construction and nine in General Industry) employee deaths in the Commonwealth since 1992. While in some cases it was found that reverse signal alarms were not operational, many accidents occurred even with operational reverse signal alarms. In a situation where an existing standard appears to be applicable, VOSH is often faced with the difficulty of having to determine whether a reverse signal alarm was audible over the surrounding construction noise at the time of the accident. This can be problematic at best, since the actual accident conditions cannot be recreated. In at least two cases, an employee operating as the signaler was struck by the vehicle when the driver lost sight of the employee while backing-up.

Fatal accidents also occurred to employees engaged in their own work unrelated to such vehicles or equipment where they apparently became de-sensitized to the familiar and repeated sounds of reverse signal alarms and other construction noise in the work zone.

In addition, the existing standards are limited in their scope and do not apply to all construction vehicles or equipment with an obstructed view to the rear. For instance, §16VAC25-175-1926.601(b)(4) only applies to motor vehicles on an off-highway jobsite not open to public traffic, and specifically does not apply to earthmoving equipment covered by §16VAC25-175-1926.602(a)(9)(ii). Neither regulation covers compactors or “skid-steer” equipment.

### Construction Standards Existing Prior to Regulatory Action:

The following boxes highlight the differences between the existing construction standards on this issue:

§1926.601(b)(4): “No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

- (i)The vehicle has a reverse signal alarm audible above the surrounding noise level or;
- (ii)The vehicle is backed up only when an observer signals that it is safe to do so.”

§1926.602(a)(9)(ii): “No employer shall permit earthmoving or compacting equipment which has an obstructed view to the rear to be used in reverse gear unless the equipment has in operation a reverse signal alarm distinguishable from the surrounding noise level or an employee signals that it is safe to do so.”

§1926.952(a)(3): “No employer shall use any motor vehicle equipment having an obstructed view to the rear unless:

- (i)The vehicle has a reverse signal alarm audible above the surrounding noise level  
or;
- (ii)The vehicle is backed up only when an observer signals that it is safe to do so.”

In reviewing the 20 fatal vehicle or equipment accidents in construction work zones where employees were struck:

<u>Number of fatalities</u>	<u>Type of vehicle involved</u>
11	dump truck
2	trackhoe
2	equipment/tandem truck
<u>5</u>	cement truck, fuel truck, pavement planer, vacuum truck, & bobcat ( <i>one each</i> )
<b>Total</b>	20

Prior to the adoption of this new unique standard, in VOSH investigations of back-up accidents involving vehicles or equipment not covered by the previously cited existing standards, the only enforcement tool available is the use of the “general duty clause”. This statutory provision, §40.1-51.1.A. of the *Code of Virginia*, is used in the absence of an applicable regulatory standard. It provides, in part, that:

“It shall be the duty of every employer to furnish to each of his employees safe employment and a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees....”

The general wording of this statute does not specifically mention hazards associated with vehicles or equipment or any other specific situation. Therefore, according to case law VOSH must document that the hazard in question was “recognized” either through industry recognition (e.g., a national consensus standard), employer recognition (e.g., a company safety rule, or the existence of an operator’s manual for the vehicle), or common sense recognition.

A concern with the use of the general duty clause is that it does not always result in consistent application of safety rules. This occurs as the use of the clause is often fact specific and dependent on a particular industry’s national consensus standard, or employer work rule or equipment operator’s manual.

Another issue regarding the “general duty clause” is that the statute has been interpreted in case law to only apply to “serious” violations, i.e., those that would cause “death or serious physical harm”. It cannot be used to eliminate “other-than-serious” hazards before they can become serious in nature.

#### General Industry Standard Prior to Regulatory Action

The following box highlights the previous VOSH/OSHA identical general industry standard on this issue:

§1910.269(p)(1)(ii): “No vehicular equipment having an obstructed view to the rear may be operated on off-highway jobsites where any employee is exposed to the hazards created by the moving vehicle unless:

- (i) The vehicle has a reverse signal alarm audible above the surrounding noise level, or;
- (ii) The vehicle is backed up only when a designated employee signals that it is safe to do so.”

The requirements of §16VAC25-90-1910.269(p)(1)(ii) do not provide adequate protection for employees under the Electric Power Generation, Transmission and Distribution standard and provide no coverage at all for all other areas in general industry.

A review of VOSH fatal accident investigations from 1992 to September, 2007 (*updated since December 6, 2006 Board meeting*) found nine fatal accidents in general industry work zones where employees were struck:

<u>Number of fatalities</u>	<u>Type of vehicle involved</u>
1	logging vehicle
1	garbage truck
3	tractor-trailer truck
1	delivery truck
1	fork lift
<u>2</u>	vehicle not specified
<b>Total</b>	<b>9</b>

As with the accident history in construction, general industry also had cases where it was found that reverse signal alarms were not operational, but other accidents occurred even with operational reverse signal alarms. Again, as in construction, general industry fatal accidents often occurred to employees who were engaged in their own work who apparently became de-sensitized to the sound of reverse signal alarms and other sounds in the work zone.

In addition, the standard is limited in its scope and does not apply to all general industry vehicles or equipment with an obstructed view to the rear. Section 16VAC25-90-1910.269(p)(1)(ii) only applies to motor vehicles in the electric power generation, transmission and distribution industry. When VOSH investigates a back-up accident involving a vehicle not covered by the above 16VAC25-90-1910 standard, the only enforcement tool available is the use of §40.1-51.1.A., referred to as the “general duty clause.” The same concerns regarding the use of the statute in the Construction Industry apply to its use in the General Industry sector as well.

Construction and general industry employers should benefit from reductions in injuries and fatalities associated with current unsafe reverse signal operations practices which would be addressed by any comprehensive regulation. On average over the last 15 years, there are two (2) reverse operation fatal accidents that occur per year which could be prevented if the proposed regulation is fully complied with.

Construction and general industry employees across the state would benefit from increased safety requirements from vehicular, machinery and equipment back-up operations. A significant reduction in employee deaths attributed to vehicles or machinery covered by the standards is anticipated. Employees that are drivers of such vehicles or designated signalers/ground guides will have to receive training on the requirements of the proposed regulation.

## **I. Summary.**

The final regulation at 16 VAC 25-97 and the amended existing standards will provide that vehicles, machinery and equipment covered by these standards shall not be operated in reverse unless the vehicle has a reverse signal alarm audible above the surrounding noise level **and** either the vehicle is backed up only when a designated observer or ground guide signals that it is safe to do so, **or** before operating such vehicle in reverse, the driver visually determined that no employee is in the path of the vehicle covered by the regulation.

The final regulation provides a definition of the term “obstructed view to the rear” which is based on federal’s OSHA’s interpretive definition of the term. Work procedures are provided for designated observers/ground guides and drivers/operators of covered equipment in 16 VAC 25-97-40:

- “A. While an employee is functioning as the designated observer/ground guide during reverse signaling activities (e.g., collecting tickets from drivers, giving verbal instructions to drivers, signaling to drivers once reverse operation of the covered vehicle has begun), the designated observer/ground guide shall:

1. Not engage in any activities other than those related to the covered vehicle being signaled;
2. Not use personal cellular phones, personal head phones or similar items that could pose a distraction for the designated observer/ground guide;
3. Be provided with and wear during daytime operations a safety vest or jacket in orange, yellow, strong yellow green or fluorescent versions of these colors;
4. Be provided with and wear during nighttime operations a safety vest or jacket with retroreflective material in orange, yellow, white, silver, strong yellow green or a fluorescent version of these colors and shall be visible at a minimum distance of 1,000 feet;
5. Not cross behind in close proximity to a covered vehicle while it is operating in reverse;
6. Always maintain visual contact with the driver of the covered vehicle while it is operating in reverse; and
7. Maintain a safe working distance from the covered vehicle."

Training requirements are provided for designated observers/ground guides and drivers/operators of covered equipment in 16 VAC 25-97-50:

- "A. Prior to permitting an employee to engage in any covered activity under this chapter, the employer shall ensure that each driver of a covered vehicle and each designated observer/ground guide is trained in the requirements of this chapter.
- B. Refresher training shall be provided by the employer for any driver of a covered vehicle or any designated observer/ground guide when the driver or designated observer/ground guide has:
  1. Been observed to violate the requirements of this chapter;
  2. Been involved in an accident or near miss accident; or
  3. Received an evaluation that reveals that the driver or designated observer/ground guide is not operating under this chapter in a safe manner."

Certain special circumstances are also addressed:

- \* Vehicles covered under the standard with video or similar technological capability to provide the driver with a full view behind the vehicle can be operated in reverse without a designated employee signaler/ground guide.
- \* For vehicles covered by the standards that were not equipped with a reverse-signal alarm upon manufacture or later retrofitted with an alarm, the final regulation provides in 16VAC25-97-30.B:
 

"If the manufacturer of the covered vehicle offered the employer a reverse signal alarm retrofit package at a reasonable and economically feasible cost and the employer did not have the retrofit package installed, this exemption does not apply."
- \* For vehicles covered by the standards where the provided reverse signal alarm is not functioning properly, the regulation provides in 16VAC25-97-30.C:
 

"C. Covered vehicles equipped with a reverse signal alarm that is not operational or is not functioning properly shall be either:

1. operated in reverse only when a designated observer or ground guide signals that it is safe to do so; or
2. removed from service until the reverse signal alarm is repaired.”

\* To the extent that any federal Department of Transportation (DOT) regulation applying to covered vehicles conflicts with any proposed regulation adopted by the Board, the DOT regulation would preempt any Board regulation in accordance with Va. Code §40.1-1, which provides in part that:

“...however, nothing in the occupational safety and health provisions of this title or regulations adopted hereunder shall apply to working conditions of employees or duties of employers with respect to which the Federal Occupational Safety and Health Act of 1970 does not apply by virtue of § 4 (b) (1) of the federal act.”

\*\*\* Refer to Additional Interpretive Guidance on these Issues in Section K. of this Directive. \*\*\*

## **J. Procedures.**

### **1. Violations to be cited.**

The following violations shall be cited under the regulation:

- a. 16VAC25-97-30.A.1.  
Failure to operate a covered vehicle in reverse with a reverse signal alarm audible above the surrounding noise level.
- b. 16VAC25-97-30.A.2.  
Failure to operate a covered vehicle in reverse only when a designated observer or ground guide signals that it is safe to do so; or before operating the covered vehicle in reverse, the driver visually determines that no employee is in the path of the covered vehicle.
- c. 16 VAC 25-97-30.C.  
Covered vehicle that was not equipped with a reverse signal alarm upon manufacture, but the manufacturer later offered to retrofit with a reverse signal alarm to the specific employer at a reasonable and economically feasible cost, and the employer refused.
- d. 16VAC25-97-30.D.  
Where immediate correction was not feasible, a covered vehicle equipped with a reverse signal alarm that was not operational or was not functioning properly shall be either: operated in reverse only when a designated observer or ground guide signals that it is safe to do so; or removed from service until the reverse signal alarm is repaired.
- e. 16VAC25-97-40.A.1., A.2., A.3., A.4., A.5., A.6. or A.7. (*as applicable*) While an employee is functioning as the designated observer/ground guide during reverse signaling activities (e.g., collecting tickets from drivers, giving verbal instructions to drivers, signaling to drivers once reverse operation of the covered vehicle has begun), the designated observer/ground guide shall:
  1. Not engage in any activities other than those related to the covered vehicle being signaled;
  2. Not use personal cellular phones, personal head phones or similar items that could pose a distraction for the designated observer/ground guide;

3. Be provided with and wear during daytime operations a safety vest or jacket in orange, yellow, strong yellow green or fluorescent versions of these colors;
  4. Be provided with and wear during nighttime operations a safety vest or jacket with retroreflective material in orange, yellow, white, silver, strong yellow green or a fluorescent version of these colors and shall be visible at a minimum distance of 1,000 feet;
  5. Not cross behind in close proximity to a covered vehicle while it is operating in reverse;
  6. Always maintain visual contact with the driver of the covered vehicle while it is operating in reverse; and
  7. Maintain a safe working distance from the covered vehicle.
- f. 16VAC25-97-40.B.  
When using a designated observer/ground guide, a driver of a covered vehicle operating in reverse failed to maintain constant visual contact with the designated observer/ground guide. If visual contact is lost, the driver shall immediately stop the vehicle until visual contact is regained and a positive indication is received from the designated observer/ground guide to restart reverse operations.
  - g. 16VAC25-97-40.C.  
Employee entered/crossed the path in close proximity to a covered vehicle while it was operating in reverse.
  - h. 16VAC25-97-50.A.  
Each driver of a covered vehicle and each designated observer/ground guide was not trained in the requirements of the regulation.
  - i. 16VAC25-97-50.B.  
Refresher training was not provided for any driver of a covered vehicle or any designated observer/ground guide when the designated observer/ground guide was observed violating the requirements of the regulation, involved in an accident or near miss accident, or received an evaluation that revealed that the designated observer/ground guide as not operating in a safe manner.

**2. Citation Numbering Procedures to be printed on VOSH citations.**  
(VOSH Inspection Personnel Only).

Violations of the regulation to be printed on VOSH citations shall be written as follows:

- a. 16VAC25-97-30.A.1.
- b. 16VAC25-97-30.A.2.
- c. 16VAC25-97-30.B.
- d. 16VAC25-97-30.C.
- e. 16VAC25-97-40.A.1., A.2., A.3., A.4., A.5., A.6. or A.7. *(as applicable)*
- f. 16VAC25-97-40.B.
- g. 16VAC25-97-40.C.
- h. 16VAC25-97-50.A.
- i. 16VAC25-97-50.B.



### 3. Codes to Enter Violations into the IMIS Database.

Data on violations of the Act listed in section J. 3. above shall be entered into the IMIS database as follows:

- |                    |                    |                 |
|--------------------|--------------------|-----------------|
| a. RVSG 0030 0A 01 | e. RVSG 0040 0A 01 | f. RVSG 0040 0B |
| b. RVSG 0030 0A 02 | 0040 0A 02         | g. RVSG 0040 0C |
| c. RVSG 0030 0B    | 0040 0A 03         | h. RVSG 0050 0A |
| d. RVSG 0030 0C    | 0040 0A 04         | i. RVSG 0050 0B |
|                    | 0040 0A 05         |                 |
|                    | 0040 0A 06         |                 |
|                    | 0040 0A 07         |                 |

### 4. Also to be Recorded as a Local Emphasis Program in IMIS. As stated in VOSH Program Directive 14-219C, the Reverse Signal Operation and Heavy Equipment Local Emphasis Program, guidelines shall be applied when recording all Reverse Signal Operation and Heavy Equipment inspections conducted whether under that LEP or other inspections where general industry and construction activities involving Reverse Signal Operation activities are found:

- a. For IMIS purposes, the VAOSH-1 form will be completed as follows:

For Inspection Type, find item 24, and enter an “H” after the colon. (This will yield “**Programmed Planned**” on the screen.)

For Inspection Classification, find item 25c and enter a “Y” after the colon. (This will yield “Local Emphasis Program” on the pop-up box. Enter “**HVYEQUIP**” in all caps in the left-hand column of the pop-up box.

- b. What had previously been referred to as non-formal complaints, other government agency referrals and reports from the public reporting potential hazards related to Reverse Signal Operations and Heavy Equipment shall be recorded on a VAOSH-7 (Notice of Alleged Safety or Health Hazards) or on VAOSH-90 (Referral Report), if appropriate. Follow current IMIS instructions. They shall also be recorded as unprogrammed inspections under the LEP.
- c. No Inspection Conducted: When no inspection of Reverse Signal Operation and Heavy Equipment activities is done for any of the reasons listed in I.1 through I.5 of VOSH Program Directive 14-219C (*or its successor*), the VAOSH-1 form shall be marked "No Inspection" (Item 35, marked “D” after the colon; "Close" (Item 44, marked “A”); "No Citations Issued": (Item 44, marked “B”); and "Other" (Item 45, marked “I”). “**HVYEQUIP**” should be recorded in the space in 45I. "Opening Conference Date" (Item 20) which will be the date of entry, (enter the date–month/day/year) and "Closing Conference Date" (On Site) (Item 46) will be the date of exit (enter the date– month/day/year). Opening and closing dates are the same date when no inspection is conducted.

*NOTE: If you have any questions regarding the proper way to record in IMIS, please contact the VOSH IMIS section.*

### 5. Procedures for Obtaining Agency Interpretations.

All outside requests for interpretations of the regulation shall be referred to the VOSH Director.

## K. Interpretations.

During the regulatory promulgation process, the Department issued explanatory and interpretive information to commenters as the regulation progressed from the proposed to the final stage.

Interpretive guidance for regulatory language that **did not** change from the proposed to the final regulation remains the official position of the VOSH Program. Interpretations based on language that did change from the proposed to the final is provided for background purposes only.

### 16 VAC 25-97-10, Applicability

This chapter shall apply to all general industry and construction industry vehicles, machinery or equipment capable of operating in reverse and with an obstructed view to the rear (hereafter referred to as "covered vehicles"), whether intended for operation in off-road work zones or over the road transportation or hauling.

**Public Comment:** “We are also concerned about vehicle owner-operators making deliveries to jobsites. First off, we are not certain if these individuals are even subject to VOSH regulations since they are sole proprietors with no employees. Regardless, you could have an instance where an independent operator who has not been trained makes a delivery to the jobsite and is cited for non-compliance. The controlling contractor would likely be cited, too under the multi-employer policy. Considering how the industry operates for the delivery of crushed stone from a quarry, for instance, this could be a problem. Or, for that matter, a UPS truck making a delivery at the jobsite could be subject to this requirement. The end result could conceivably be to require the addition of employees at all possible entrances to the jobsite to turn away any drivers who have not been trained. Again, extra expense for the contractor....very little improvement in jobsite safety.”

**VOSH Response:** With regard to ...[the Commenter’s] concern that vehicle owner-operators or UPS drivers making deliveries to jobsites, ...[the Commenter] is correct that there some jurisdictional issues. If the owner/operator is a sole owner of the company (not incorporated, not a partnership), and has no employees, then VOSH laws, standards and regulations do not apply. While VOSH does have a multi-employer worksite citation policy, it does not use it to enforce training provisions in regulations. So, if the sole-ownership vehicle operator/owner was not trained in the proposed regulation, VOSH would not cite the general contractor for that lack of training” (*Source: TH-03, Final Regulation Agency Background Document, December 8, 2008*).

**Public Comment:** “We are also concerned about personal liability for operators when they make a determination that no employees are or will be in the path of the machine. While they may not be subject as an individual to a VOSH citation, we believe they may be assuming some potential liability.”

**VOSH Response:** “...as noted previously, the newly added language in 16 VAC 25-97-30.A.2.b. (“Before operating the covered vehicle in reverse, the driver visually determines that no employee is in the path of the covered vehicle.”), is based on a current provision from the federal OSHA Logging Standard, 1910.266. The Department is not aware of any liability issues with regard to the Logging Standard provision that did not already exist in statutory or common law. If an accident occurs “off road” then VOSH regulations will apply as will existing Workers’ Compensation laws and regulations. If an accident occurs on the highway or a street, the same laws and regulations will apply, along with existing traffic regulations that are enforced by

police and sheriff's department around the state." (Source: TH-03, Final Regulation Agency Background Document, December 8, 2008).

#### 16 VAC 25-97-20, Definitions

The phrase "obstructed view to the rear" means anything that interferes with the overall view of the operator of the vehicle to the rear of the vehicle at ground level, and includes, but is not limited to, such obstacles as any part of the vehicle (e.g., structural members); its load (e.g., gravel, dirt, machinery parts); its height relative to ground level viewing; damage to windows or side mirrors, etc., used for rearview movement of the vehicle; restricted visibility due to weather

A number of commenters may be under the impression that because a vehicle has a reverse signal alarm, it automatically would be considered to have an obstructed view to the rear and be covered by the proposed regulation. That is not the case. The following additional guidance has already been provided by Department personnel in interpreting the language of the new regulation:"

**Public Comment:** "...will a ... truck delivering a refrigerator to a model home under construction be covered?"

**VOSH Response:** "... any delivery truck operated on behalf of an employer will be covered under the ... [regulation] if there is no access to look out a rear window of the vehicle, as the dangers present are the same. If the vehicle is essentially a pick-up truck or flatbed with a refrigerator sitting in the back, and the cargo is completely blocking the rear window of the truck thereby creating a blind spot, then that would constitute an obstructed view to the rear and the truck would be covered by the ...regulation."

**Public Comment:** "What about pick-up trucks with shells?"

**VOSH Response:** "With the exceptions noted in the definition for "obstructed view to the rear" such as "damaged windows", as long as the shell has a front and rear window that are not obstructed and they allow the driver to look directly out the rear window of the truck, then the truck would not have an obstructed view to the rear and would not be covered by the proposed regulation."

**Public Comment:** "And your position that forklifts would 'generally not be considered to have an obstructed view to the rear' seems to only address small forklifts carrying no loads or small loads. Larger forklifts carrying capacity loads, it seems to me, brings into question the 'obstructed view' position."

**VOSH Response:** "...most if not all forklifts carry the load on forks mounted on the front of the vehicle. If the driver is traveling in reverse with a full load on the front of the vehicle the load does not impact the determination of whether there is an obstructed view to the rear of the forklift."

**Public Comment:**"It seems to me that as written this proposal would require rollers (including asphalt rollers) and rubber tire loaders (including skid steer loaders) that would be classified as "covered vehicles" to meet all of the requirements of this proposal."

**VOSH Response:** “Rollers would typically not be considered to have an obstructed view to the rear because the operator can normally turn his head and look behind his vehicle through an opening in his cab – in fact many rollers don’t even have a cab, so there could be no obstruction that could interfere with the driver’s ability to look behind the vehicle as he was traveling in reverse. Rubber tire loaders as well normally have a glass enclosed cab that allows the driver to turn his head and look out the rear view window, so such vehicles would not normally be considered to have an obstructed view to the rear. Skid steer loaders, depending on the design, may or may not be considered to have an obstructed view to the rear, depending on the location of the driver’s seat and any rear view window that the driver can look out of.” (Source: TH-03, Final Regulation Agency Background Document, December 8, 2008).

**Public Comments:** “Concerns expressed regarding coverage of “scrapers.”

**VOSH Response:** “Without any photos or video to view, the Department would consider many scrapers and many open cab construction vehicles to not have an obstructed view to the rear and not be covered by the standard because the driver can see directly behind the vehicle at ground level by looking through a rear view mirror, or by turning around and looking out the rear window/opening. In addition, according to federal OSHA interpretations, vehicles with rotating cabs are not considered to have an obstructed view to the rear since the operator can rotate the cab in the direction he is traveling.” (Source: TH-03, Final Regulation Agency Background Document, December 8, 2008).

**Public Comments:** “Concerns expressed regarding coverage of “front end loaders.”

**VOSH Response:** “A front end loader (with only a bucket attachment on the front of the vehicle and no attachment on the back) that has a large glass enclosed cab that allows the operator to see directly behind the vehicle through the rear glass, would not be considered to have an obstructed view to the rear. As noted in the regulation, there are certain exceptions to this general rule (e.g. damage to windows/mirrors, restricted visibility due to weather conditions or work being done after dark without proper lighting).” (Source: TH-03, Final Regulation Agency Background Document, December 8, 2008).

**Public Comments:** “Concerns expressed that the proposal would create uncertainty and vagueness leading to potential citations in the areas of definitions and scope (i.e., “Does it apply to trucks with shells, vans, forklifts, etc.”).

**VOSH Response:** “The ... regulation applies to all vehicles in general industry and the construction industry with an “obstructed view to the rear.” This phrase is identical to the wording used in current regulations and the definition below is derived directly from a federal OSHA interpretation on the subject: [http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=INTERPRETATIONS&p\\_id=19522](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=19522)

The phrase “obstructed view to the rear” means anything that interferes with the overall view of the operator of the vehicle to the rear of the vehicle at ground level, and includes, but is not limited to, such obstacles as any part of the vehicle (e.g., structural members); its load (e.g., gravel, dirt, machinery parts); its height relative to ground level viewing; damage to windows or side mirrors, etc., used for rearview movement of the vehicle; restricted visibility due to weather conditions (e.g., heavy fog, heavy snow); or work being done after dark without proper lighting.”

Generally, any truck where the driver can see directly behind the vehicle at ground level by looking through a rear view mirror, or by turning around and looking out the rear window would not be considered to have an obstructed view to the rear. Examples of this would generally include pick-up trucks, fork lifts, etc. As noted in the regulation, there are certain exceptions to this general rule (e.g., damage to windows/mirrors, restricted visibility due to weather conditions or work being done after dark without proper lighting).”

“On the other hand, certain tractor trailers pulling a large enclosed trailer, and vans with no or blocked/obstructed back windows, would be covered because they would be considered to have an obstructed view to the rear.”

16 VAC 25-97-30, Covered Vehicle Requirements

16 VAC 25-97-30.A.

- A. No employer shall operate any covered vehicle in reverse unless:
1. The covered vehicle has a reverse signal alarm audible above the surrounding noise level, and
  - 2.a. The covered vehicle is operated in reverse only when a designated observer or ground guide signals that it is safe to do so; or
  - 2.b. Before operating the covered vehicle in reverse, the driver visually determines that no employee is in the path of the covered vehicle.

**Public Comments:** "As I understand the proposal however, it potentially requires the hiring/utilization of hundreds, perhaps thousands, of new "designated observer/ground guides" that do not presently exist. That is the potential cost that has not been addressed, and it is substantial."

**VOSH Response:** We do not believe that hundreds or thousands of new "designated observer/ground guides" would have to be hired to comply with the regulation. We believe that most employers who currently do not use "designated observer/ground guides" will take advantage of the exemption that enables the driver to operate in reverse without a "designated observer/ground guide":

~~"if the driver visually determines from outside the vehicle that no employees are in the backing zone and that it is reasonable to expect that no employees will enter the backing zone during reverse operation of the vehicle."~~

"Before operating the covered vehicle in reverse, the driver visually determines that no employee is in the path of the covered vehicle."

*Note: The above text went through several revisions between the proposed and final versions of the regulation.. The commenter was addressing an intermediate version which is shown with the language struck through. The final language is underlined.*

The above language change in 2.b. is based on 1910.266(f)(2)(v) of the Logging Standard which provides:

"Before starting or moving any machine, the operator shall determine that no employee is in the path of the machine."

"The change in text was added to address potential cost issues associated with the exemption in the original proposed regulation from use of a designated observer/ground guide that would have allowed drivers to get out of the vehicle to determine that no employees are in the backing zone and that it is reasonable to expect that no employees will enter the backing zone. The change would also provide a level of consistency by providing drivers of covered vehicles in construction and general industry the same reverse operation option as provided drivers in the logging industry.

This change would also help to address situations like a driver pulling into a large shipping terminal and having to back-up to a loading dock – the change would allow the driver as he pulls in to determine that no employees are in the back-up area and then continue with back-up without having to get out of the vehicle. Finally, the Department also considered concerns expressed at the April 16<sup>th</sup> meeting by construction contractors that significant costs could be incurred by the delays on large road building projects where a constant flow of dump trucks could result in each driver having to stop his vehicle, exit the cab to check for employees in the back-up zone, re-enter the cab and proceed with reverse operations for hundreds of yards.”  
(Source: TH-03, Final Regulation Agency Background Document, December 8, 2008.)

“In looking at the structure of the regulation, it may be more helpful to the regulated community to put the "Exemptions" section up at the beginning of the regulation instead of at the end, so that employers and employees realize that there is flexibility built into the regulation to limit compliance costs. We would also certainly address this issue in our training materials.

The Department believes that most employers who currently use a "designated observer/ground guide" will continue to do so and will train and outfit them according to the regulation and understand that some additional cost may be associated with that. As previously noted, we will try to reduce training costs by providing free training materials on-line for employers and employees to access. In our experience "designated observer/ground guides" are used primarily on construction sites and with mobile work crews where more than one employee is already present because of the nature of the work, so we do not believe those employers will be forced by the proposed regulation to hire new employees to act as "designated observer/ground guides", they will merely train existing employees.

For those employers that send delivery/trade trucks out with only one person, as noted above, those employers/drivers can take advantage of the exemption. If the single employee drives onto a worksite with other employers working in the area and chooses to request, as many do currently, assistance from an employee of another contractor on site to act as the "designated observer/ground guide," there is nothing in the proposed regulation to prohibit that practice. The employer of the driver would not be required to hire or train a "designated observer/ground guide" just to accompany their single driver, nor would it be that employer's responsibility to train the other contractor's "designated observer/ground guide."

What we want to accomplish with this new regulation is to change current behaviors that cause these deaths and debilitating accidents. VOSH contends that without exception, every reverse signal operation fatality involves the driver either not knowing anyone is in the back-up zone or losing sight of someone he knows is in the back-up zone and proceeding anyway. Under the prior regulations, as long as a covered vehicle has a functioning back-up alarm, the burden of avoiding an accident is placed squarely on the shoulders of the pedestrians in the traffic area. No real safety responsibility was placed on the driver while operating the vehicle other than to make sure the back-up alarm was working. A driver could back-up without even checking his side mirrors under the old regulations.”

“The ... regulation will place a positive responsibility on the driver to either keep the designated observer/ground guide in sight at all times during reverse operations, or in the absence of a designated observer/ground guide, to visually determine that no one is in the back-up zone prior to beginning reverse operations of the vehicle.”

“If a driver with a covered vehicle (properly trained under the proposed regulation) approaches an area where he needs to operate in reverse, ...and determines that the backing zone is clear, and then backs-up safely, we have changed the driver's behavior. If the driver sees that there is pedestrian traffic in the area he needs to back up in, uses a "designated observer/ground guide", and keeps that individual in site at all times during reverse operation, we have changed the driver's behavior.”

**16 VAC 25-97-30.B.**

- B. Covered vehicles that were not equipped with a reverse-signal alarm upon manufacture or were not later retrofitted with an alarm are exempt from subdivision A.1 of this section. If the manufacturer of the covered vehicle offered the employer a reverse signal alarm retrofit package at a reasonable and economically feasible cost and the employer did not have the retrofit package installed, this exemption does not apply.

*Note: the above text went through several revisions between the proposed and final versions.*

The explanation for the final language follows:

“This changed section is being moved from the 16 VAC 25-97-60, Exemptions, section so that all coverage issues are addressed in one area [the “Exemptions” section was then deleted from the final regulation]. The new text regarding retrofit packages is added for consistency purposes – federal OSHA has a similar policy for older industrial trucks (forklifts) that were originally manufactured without seat belts. OSHA’s policy is that if a manufacturer offered to retrofit a seatbelt onto a forklift, and OSHA can prove that the retrofit package was offered to and refused by the employer, then OSHA will issue a citation to the employer for failure to provide a seatbelt. If no retrofit package is available or it was not offered to the specific employer, no citation can be issued for failure to have the retrofit completed.” *(Source: TH-03, Final Regulation Agency Background Document, December 8, 2008.)*

**Public Comments:** “A couple of our members have finally reviewed the regs and expressed some concern about the retrofit language in paragraph B under "covered vehicle requirements." Their questions are what constitutes "at a reasonable and economically feasible cost ", what criteria will be used in making that determination and who will be making that determination? They are concerned that this is, in essence, a mandate to retrofit all trucks operating in Virginia with back-up alarms.”

**VOSH Response:** “The Department will not use this provision to mandate retrofitting of all trucks with back-up alarms. As the above explanation indicates, the Department would be required to prove that not only was there a retrofit package available from the specific manufacturer of the vehicle, but that it was specifically offered to the individual employer for the specific vehicle, and that the employer refused it. The above requirements pose a very difficult standard of proof to meet in a courtroom, and any use of the section would be a very rare occurrence. To the best knowledge of Department staff over the last 23 years there has not been a single instance of this issue of a retrofit package for either a seat belt on a forklift or for a back-up alarm on a vehicle.” *(Source: TH-03, Final Regulation Agency Background Document, December 8, 2008).*

**16 VAC 25-97-30.C.**

- C. Where immediate correction is not feasible, covered vehicles equipped with a reverse signal alarm that is not operational or is not functioning properly shall be either:
1. operated in reverse only when a designated observer or ground guide signals that it is safe to do so; or
  2. removed from service until the reverse signal alarm is repaired.

*NOTE: The above text went through several revisions between the proposed and final versions. The explanation for the final language follows:*

“The new text is added to assure that malfunctioning reverse signal alarms are promptly repaired. A concern was expressed at the April 16th meeting about what a general contractor is supposed to do if an independent dump truck driver attempts to enter a road construction site with a malfunctioning reverse signal alarm. One option mentioned by a participant was to not allow the dump truck onto the work site. Department personnel agreed with that approach.

Another concern was raised on the issue of what the Department would require if it was found that a back-up alarm stopped functioning after it was already on the work site (and the alarm had been properly functioning when it entered the work site). Department personnel indicated that in such a circumstance, and in light of it being impossible for the employer to comply with the reverse signal alarm portion of the regulation, it would be permissible to operate the vehicle with only a designated observer/ground guide, and that the revised proposed regulation would be changed to allow such operation. All agreed that the malfunctioning alarm is then to be fixed as soon as possible.” *(Source: TH-03, Final Regulation Agency Background Document, December 8, 2008.)*

16 VAC 25-97-30.D.

D. Covered vehicles with operable video or similar technological capability used by the driver and capable of providing the driver with a full view behind the vehicle are exempt from subdivision A.2.a of this section.

*NOTE: The above text went through several revisions between the proposed and final versions. The explanation for the final language follows:*

“This section is being moved from the 16 VAC 25-97-60, Exemptions, section so that all coverage issues are addressed in one area. Text changes were made to clarify that the equipment has to be operable and used in order for the exemption to apply. *(Source: TH-03, Final Regulation Agency Background Document, December 8, 2008.)*

16 VAC 25-97-30.E.

E. To the extent that any federal Department of Transportation (DOT) regulation applies to covered vehicles conflicts with this chapter, the DOT regulation shall take precedence.

**16 VAC 25-97-40.**



- A. While an employee is functioning as the designated observer/ground guide during reverse signaling activities (e.g., collecting tickets from drivers, giving verbal instructions to drivers, signaling to drivers once reverse operation of the covered vehicle has begun), the designated observer/ground guide shall:
1. Not engage in any activities other than those related to the covered vehicle being signaled;
  2. Not use personal cellular phones, personal head phones or similar items that could pose a distraction for the designated observer/ground guide;
  3. Be provided with and wear during daytime operations a safety vest or jacket in orange, yellow, strong yellow green or fluorescent versions of these colors;
  4. Be provided with and wear during nighttime operations a safety vest or jacket with retroreflective material in orange, yellow, white, silver, strong yellow green or a fluorescent version of these colors and shall be visible at a minimum distance of 1,000 feet;
  5. Not cross behind in close proximity to a covered vehicle while it is operating in reverse;
  6. Always maintain visual contact with the driver of the covered vehicle while it is operating in reverse; and
  7. Maintain a safe working distance from the covered vehicle.

*Note: The above text went through several revisions between the proposed and final versions. The explanation for the final language follows:*

“The new text is to make clear that the provisions in A. ...only apply to employees while they are functioning as designated observers/ground guides for covered vehicles when the vehicles are operating in reverse. When the employees are not engaged as designated observers/ground guides, they are free to do other assigned work.” (Source: TH-03, *Final Regulation Agency Background Document*, December 8, 2008.)

“The above changes are added to address unsafe behaviors of designated observers/ground guides identified by the Department that have led to fatal accidents in the past. Violation of these requirements by a trained employee would normally constitute employee misconduct. The wording for the ... [some] provisions comes from safety rules instituted by a Virginia employer following the death of their employee who was functioning as a designated observer/ground guide.” (Source: TH-03, *Final Regulation Agency Background Document*, December 8, 2008).

**Public Comments:** “Concerns expressed regarding the costs associated with training under the regulation.”

**VOSH Response:** “... the regulation requires employers to train drivers of covered vehicles and designated observers/ground guides in the requirements of the regulation. The requirements for designated observers/ground guides are spelled out specifically in the ... regulation and provide a simple, commonsense approach to protecting both the ground guide and other workers in the area. The requirements are actually modeled in part after current provisions in the construction standards for individuals working as “monitors” in the Fall Protection Standards, 1926.501 to 503. In addition, the personal protective equipment requirements for designated observers/ground guides are taken directly from current OSHA regulation 1926.201(a), which incorporates by reference Part VI of the *Manual on Uniform Traffic Control Devices*, (1988 Edition, Revision 3 or the Millennium Edition).

16 VAC 25-97-40.B.

B. When using a designated observer/ground guide, no driver of a covered vehicle shall operate in reverse unless they maintain constant visual contact with the designated observer/ground guide. If visual contact is lost, the driver shall immediately stop the vehicle until visual contact is regained and a positive indication is received from the designated observer/ground guide to restart reverse operations.

16 VAC 25-97-40.C.

“This new language is to address the issue where a covered vehicle is backing up for a long distance and an employee needs to cross the back-up path, but the truck may still be several hundred yards from the where the employee is going to cross; or the paving example ... where the employee cannot walk across the newly paved roadway. A 100 foot distance was originally chosen so that there would be no blind spot issues with large vehicles and keeping in mind that a vehicle traveling at 5 MPH covers about 7.3 feet/second - Comments were requested on this distance issue. One commenter suggested more “performance oriented” language such as “in the immediate vicinity” to give employers more flexibility to address site configuration issues. Department staff recommend use of the phrase “in close proximity to.” The Department intends to address the issue of vehicle backing speeds and blind spots in its training materials on the eventual standard. (Source: TH-03, Final Regulation Agency Background Document, December 8, 2008.)

16 VAC 25-97-50, Training

16 VAC 25-97-50.A.

A. Prior to permitting an employee to engage in any covered activity under this chapter, the employer shall ensure that each driver of a covered vehicle and each designated observer/ground guide is trained in the requirements of this chapter.

**Public Comment:** There is insufficient guidance on employee training.

**VOSH Response:** As noted above, the Department plans to prepare and make available to employers a free training program that could be used to meet the training requirements contained in the proposed regulation. You asked how the Department would ensure that training was provided since there is no requirement in the proposal to document training. We did not include a documentation requirement so as not to impose a significant “paperwork” requirement on employers. Many federal OSHA regulations contain training requirements with no corresponding documentation requirement. Part of the training program the Department develops will be a non-mandatory method for documenting training through employee certification, similar to what OSHA does in several of its regulations. If an employer does not want to keep such records, and VOSH conducts an inspection, it will follow normal procedures for documenting compliance with training requirements through discussions/interviews with employer representatives and employees.

**Public Comment: Question about training.**

**VOSH Response:** "... the regulation requires employers to train drivers of covered vehicles and designated observers/ground guides in the requirements of the regulation. The requirements for designated observers/ground guides are spelled out specifically in the ... regulation and provide a simple, commonsense approach to protecting both the ground guide and other workers in the area. The requirements are actually modeled in part after current provisions in the construction standards for individuals working as "monitors" in the Fall Protection Standards, 1926.501 to 503. In addition, the personal protective equipment requirements for designated observers/ground guides are taken directly from current OSHA regulation 1926.201(a), which incorporates by reference Part VI of the Manual on Uniform Traffic Control Devices (1988 Edition, Revision 3 or the Millennium Edition).

16 VAC 25-97-50.B.

- B. Refresher training shall be provided by the employer for any driver of a covered vehicle or any designated observer/ground guide when the driver or designated observer/ground guide has:
1. Been observed to violate the requirements of this chapter;
  2. Been involved in an accident or near miss accident; or
  3. Received an evaluation that reveals that the driver or designated observer/ground guide is not operating under this chapter in a safe manner.

**L. Outreach and Phased Enforcement Approach**

To provide employers and employees with sufficient time to familiarize themselves with the requirements of the comprehensive new Reverse Signal Operation regulation, the VOSH Program will use a phased enforcement approach:

1. VOSH Inspectors/Consultants will be provided with handouts on the new regulation that can be distributed to employers and employees in the weeks leading up to the effective date of September 18, 2009. A training program will be posted on the Department's Web site.

Articles on the new regulation will be sent out for publication to organizations with newsletters. "Quick cards" will be available for download from the Department's Web site to briefly explain the regulation, and will be translated into Spanish as well. A VOSH Directive with enforcement procedures and interpretations will be posted on the Department's Web site.

2. For the first month after the effective date of the regulation (**September 18, 2009 to October 18, 2009**), VOSH will fully enforce §§ 10, 20 and 30, which contain the basic requirements of the regulation and are similar to current federal OSHA regulations. For §40, which contains requirements for ground guides/designated observers and drivers, VOSH Inspectors will give one "warning" for any noted violations of that section at the specific worksite, but not cite the violation.

The VOSH Inspector will verify that the violation is corrected, and note the violation and corrective action taken in field notes. The warning and handout materials need to be provided to an on-site supervisor, foreman, or lead person. If the VOSH Inspector returns the next day and finds the same violation recurring, or if the employer refuses to correct the violation, the employer can be cited.

3. For §50, which contains the training requirements, that section will not be cited during the 30 day phase-in period **(September 18, 2009 to October 18, 2009)**. This extra time period will give employers and employees time to access the training materials that are being provided.
4. All sections of the regulation will be fully enforced **starting October 19, 2009.**

C. Ray Davenport  
Commissioner

Attachment: None

Distribution: Commissioner of Labor and Industry  
Assistant Commissioner - Programs  
VOSH Directors and Managers  
Cooperative Programs Director and Manager  
VOSH Compliance and Cooperative Programs Staff  
Legal Support and IMIS Staff  
OSHA Region III and Norfolk Area Offices